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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,319	03/03/2004	Gopalakrishnan G. Juttu	STC-03-0009	4366
7590	09/29/2005		EXAMINER [REDACTED]	DANG, THUAN D
Jim Wheelington SABIC Americas, Inc. SABIC Technology Center 1600 Industrial Blvd. Houston, TX 77478			ART UNIT [REDACTED]	PAPER NUMBER 1764
DATE MAILED: 09/29/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/792,319	JUTTU ET AL.
	Examiner Thuan D. Dang	Art Unit 1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 14 July 2005.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-14 and 37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-14 and 37 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Specification***

The amendment filed 7/14/2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the first full paragraph on page 11, lines 3-8 cannot be entered since the mole percentage of the platinum is not supported by the specification.

**Applicant is required to cancel the new matter in the reply to this Office Action.**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-14 and 37 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

“a metal consisting essentially of” has no support from the specification since nowhere in the specification, the expression “consisting essentially of” can be interpreted.

Regarding claim 2, nowhere in the specification supports a catalyst having a silicon to gallium atomic ratio greater than 5.

Regarding claim 5 and 6 and 7, nowhere in the specification support the percentage of the platinum is based on wt%.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Desmond et al (4,766,265).

Desmond discloses a process of aromatization of alkane such as ethane to aromatic in the presence of a catalyst containing gallium zeolite having ZSM-5 structure a Si/Ga ratio ranging from 10:1 to 100:1 on which platinum has been deposited at the temperature ranging from 500 to 700°C under the pressure ranging from ambient to 20 atm and a space velocity from about 0.1 to about 50 (the abstract; field of invention; col. 2, lines 54-68; col. 3, lines 25-50; col. 4, lines 38-47).

The amount of platinum can be found on column 4, lines 5-25.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1764

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966); that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Desmond et al (4,766,265) in considered with the admitted prior art disclosed in the specification.

Desmond discloses a process as discussed above.

Desmond discloses on column 3, lines 3-5 that the as-synthesized molecular sieve can contain alkali metal. Further, as admitted by applicants on page 8 of the specification:

“According to the IUPAC recommendations, an example of the sodium form of the zeolite catalyst would be represented as:



where  $x=0.1-25$ ;  $y=60-100$ ; and  $z=0.1-10$ .”

Such a sodium form of gallosilicate is well-known in the art. Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Desmond process by using this well-known zeolite as the gallosilicate for the Desmond catalyst to arrive at the applicants' claimed process since it is expected that using any form of gallosilicate to prepare the catalyst for Desmond's process would yield similar results.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Desmond et al (4,766,265) in considered with Bernard et al (4,416,806).

Desmond discloses a process as discussed above.

Desmond does not discloses that the catalyst is treated with hydrogen and sulfur as called for in claim 37. However, Bernard discloses an aromatization catalyst is treated with sulfur and reduced with hydrogen (the abstract; col. 3, lines 30-34).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Desmond process by treating the catalyst with hydrogen and sulfur to arrive at the applicants' claimed process since Barnard discloses that the catalyst possess exceptional aromatizing properties and excellent stability (col. 3, lines 35-40).

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-13 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 5, 7-9, 15, and 16 of copending Application No. 10/748,418. Although the conflicting claims are not identical, they are not patentably distinct from each other because the conflicting claims disclose a process of aromatization of alkane in the presence of MFI-catalyst containing gallium substituted for aluminum in the zeolite and platinum at a temperature 350 to 650°C at the pressure 10-2000 kPa. There are minor differences between the conflicting process and the claimed process including the ratio of Si/Ga, SV, and the ZSM-5 structure. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the conflicting process by using an appropriate Si/Ga, SV, and ZSM-5 structure since (1) it is expected that a zeolite having any ratio of Si/Ga would yield similar result, (2) SV is a parameter must be selected to optimize the process and (3) ZSM-5 is a MFI zeolite.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-14 are provisionally rejected under 35 U.S.C. 103(a) as being obvious over copending Application No. 10/748,418 which has a common ownership with the instant

application. Based upon the earlier effective U.S. filing date of the copending application, it would constitute prior art under 35 U.S.C. 102(e) if published or patented. This provisional rejection under 35 U.S.C. 103(a) is based upon a presumption of future publication or patenting of the conflicting application.

This provisional rejection might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the copending application was derived from the inventor of this application and is thus not the invention "by another," or by a showing of a date of invention for the instant application prior to the effective U.S. filing date of the copending application under 37 CFR 1.131. For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

#### *Response to Amendment*

The Declaration under 37 CFR 1.132 filed 7/14/05 is insufficient to overcome the rejection of claims 1-13, 14, and 37 based upon Desmond as set forth in the last Office action because: the unexpected results cannot be used to overcome 102 rejection.

Assuming arguendo that no 102 rejection were applied, results shown in the declaration cannot show unexpected results since the claimed process is not the exemplified process (see claims). Further, the results as shown in tables cannot support unexpected results (see tables). Results are inconsistent. For example, in table 1 the exemplified process has a yield of 21.3%.

However, the BTX selectivity reaches only 41%. In table 2, exemplified has a yield 24.8%, but the conversion is only 62%.

***Response to Arguments***

Applicant's arguments filed 7/14/05 have been fully considered but they are not persuasive.

The argument that Desmond requires Rhenium in the catalyst is not persuasive since applicants do not exclude rhenium from the catalyst (see claims). Note that applicants claim a catalyst comprising ...

The argument that the results shown in the affidavit from example 1 demonstrate the improvement and unexpected result of the claimed invention is not persuasive since if so what is improved? Further, the claimed process does not use a ZSM-5 catalyst except claim 13.

The argument that a suggestion or motivation to modify the ZSM-5 on which platinum has been deposited to a zeolite having gallium and silicon in the framework on which a metal consisting essentially of platinum has been deposited did not exist is not persuasive since such a catalyst used in the conflicting process (see claim 1, 5, and 6).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuan D. Dang  
Primary Examiner  
Art Unit 1764

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